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Bechuanaland Protectorate.

Annual Medical and Sanitary Report For the Year 1935.




Published for the Government of the Bechuanaland Protectorate
by the Crown Agents for the Colonies, 4, Millbank, London, S.W.1.
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BECHUANALAND PROTECTORATE.

ANNUAL MEDICAL AND SANITARY REPORT.

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SECTION I - ADMINISTRATION.

1. STAFF.

The authorised staff consists of :-

EUROPEAN.

- 1 Principal Medical Officer.
- 8 Medical Officers.
- 2 Subsidized Medical Missionaries.
- 1 Subsidized Doctor at Mafeking.
- 1 Clerk to the Principal Medical Officer.
- 1 Clerk Typist.
- 1 Part-time Clerk.
- 3 Hospital Matrons.
- 6 Staff Nurses.
- 1 Welfare Officer.
- 2 Dispensers.
- 1 Sanitary Inspector.
- 2 Chauffeur-Mechanics.
- 1 Mechanic.

NATIVE.

- 2 Dispensers.
- 2 Interpreters.
- 2 Nurse Aids.
- 2 Pupil Dispensers.
- 13 Nurses (Probationers)
- 1 Messenger.
- 4 Pupil Sanitary Inspectors.
- 3 Cooks.
- 4 Washerwomen or Laundry boys.
- 3 Ward Attendants.
- 3 Staff housemaids.
- 3 Gardeners.
- 1 Mechanic.

2. APPOINTMENTS, CHANGES, ETC. IN THE STAFF.

Dr. H. W. Dyke, Principal Medical Officer, was appointed Principal Medical Officer of Basutoland and left the Bechuanaland Service on 30th April, 1935.

Dr. J. W. Stirling, Senior Medical Officer, Maseru, Basutoland, was appointed Principal Medical Officer for the Bechuanaland Protectorate and assumed duty on 1st May, 1935.

Dr. D. J. D. Henderson resigned from the Service on appointment as Medical Officer to the Roan Antelope Copper Mines.

Dr. M. L. Freedman was appointed as a Medical Officer on 24th March, 1935, vice Dr. D. J. M. MacKenzie who was transferred from Maun to Lobatsi in place of Dr. Henderson.

Mr. J. Anderson was appointed Clerk to the Principal Medical Officer on 3rd November, 1935.

Miss D. Barr, Staff Nurse, was appointed on 1st August, 1935.

Miss E. E. Howard, Staff Nurse, was appointed on 20th May, 1935.

Miss M. B. Ensor-Smith, Staff Nurse, was appointed on 3rd December, 1935.

Miss B. Cocklin (whose salary is paid out of the Chamber of Mines Grant) was appointed part-time Clerk at Lobatsi on 1st June, 1935.

3. POSTINGS OF STAFF ON 31st DECEMBER, 1935 :

MAFEKING :

Principal Medical Officer, Dr. J. W. Stirling.
Clerk, Mr. J. Anderson.
Clerk Typist, Miss D. Mearns.
1 Native Medical Orderly.

FRANCISTOWN :

Medical Officer, Dr. D. Drew
Dispenser, Mr. H. F. Bennett.
Staff Nurses, Miss I. S. Hodges)
"Locum" relieving Miss Mitchell)
1 Native Pupil Dispenser.
4 Native Nurses.

FRANCISTOWN: (Contd.)

2 Native Ward Attendants.
1 Native Housemaid.
1 Native Laundry Boy.
1 Native Gardener.

LOBATSI:

Medical Officer, Dr. D. J. M. MacKenzie.
Matron, Miss K. Barr.
Staff Nurses, Miss A. F. Jack)
 Miss D. Barr)
Staff Nurses, Miss M. B. Ensor-Smith.
Part-time Clerk, Miss B. Cocklin.
1 Native Dispenser.
5 Native Nurses.
1 Native Ward Attendant.
2 Native Laundry boys.
1 Native cook.
1 Native housemaid.
1 Native gardener.
1 Native Mechanic.

SEROWE:

Medical Officer, Dr. A. A. Morgan.
Dispenser, Mr. T. E. Booker.
Staff Nurses, Miss M. Ford)
 Miss E. E. Howard)
Welfare Officer, Miss E. Haile
Mechanic, Mr. P. A. Mackintosh.
1 Native Pupil Dispenser.
4 Native Nurses.
1 Native Ward Attendant.
1 Native Housemaid.
1 Native Cook.
1 Native washerwoman.
1 Native Gardener.

NGAMILAND:

Medical Officer, Dr. M. L. Freedman.
1 Native Pupil Dispenser.
1 Native Medical orderly.
1 Native cook.

GABERONES:

Medical Officer, Dr. M. Gerber.
1 Native Dispenser.

KANYE:

Subsidized Medical Missionary.
1 European Trained Nurse.

MOCHUDI:

Subsidized Medical Missionary.
1 European Trained Nurse.

ON OVERSEAS LEAVE:

Matron, Miss C. H. Mitchell.

4. It has, unfortunately, to be reported that the authorized European Staff was not maintained at full strength this year. As far as the Medical Officers are concerned it would appear that the emoluments are not conducive to the obtaining of keen, suitable men.

It is not surprising, when one takes into consideration not only the remuneration but also the conditions under which the Medical Officers in the Protectorate have to work - the lack of social amenities, and lack of educational facilities for their children, that the difficulty of obtaining Medical Officers was felt acutely in the Protectorate.

As far as the obtaining of local Medical men was concerned, the prosperity in the Union of South Africa militated against our obtaining suitable candidates for the Service.

Whilst the work of the Service was, to a great extent, held up owing to the above reasons, it was felt that a little delay in the selection of suitable candidates would ultimately be in the interests of the Territory.

As far as the Nursing Staff is concerned it has, unfortunately, been necessary to engage numerous "locums" - mainly owing to the fact of the great shortage of qualified nurses in the Union of South Africa. In this connection one must draw attention to the fact that we are embarking on a scheme for the training of Native Nurses and that all due caution must be taken in the selection of the European staff for this service. I might point out that it is not every qualified nurse who is willing to and capable of imparting to Natives a knowledge of Nursing. It is perhaps not recognised that

this is becoming a special branch of Nursing in the Protectorate, where Natives are in training for the Nursing profession.

Owing to the shortage of Nurses in the Union and the fact that the Nurses we do have are in a position to demand, not so much additional emoluments, as what one might term "the amenities of life", we in the Bechuanaland Protectorate are in a difficult position. While we are able to obtain Nurses for perhaps one, two, or three months we have not been able to obtain sufficient Nurses who hold their position for much longer, and therefore, under the circumstances, it is quite understandable that we have been unable to maintain our Nursing Staff at full strength, except by means of "locums".

It is perhaps hardly necessary for me to emphasise the fact that unless we have a stable staff our training of Native Nurses is going to be very haphazard, and I can even now visualise the disastrous consequences which are likely to accrue from the constant changes in the European Staff, in the training of Native Nurses in the Protectorate. This is one of the serious problems which the Administration of the Protectorate has to face.

We are fortunate in having several European Nurses who are keen on training Native Nurses, but they are all young Nurses and from past experience it is probable that before long they will leave to get married.

Another aspect of the training of Native Nurses which is causing anxiety arises from the fact that it appears likely to take years of religious and moral education before the seriousness of the moral lapses amongst the Native Nurse probationers can be overcome.

5. ORDINANCES AND REGULATIONS AFFECTING PUBLIC HEALTH
ENACTED DURING THE YEAR:

The Bechuanaland Protectorate Native Labour (Medical Examination) Proclamation 1935. No. 21 of 1935.

6. FINANCIAL: In respect of financial years ending
31st March 1935 and 31st March 1936 :-

ORDINARY REVENUE:

Hospital and Dispensary fees for year ending 31st March, 1935.	£ 792.19. 9
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Hospital and Dispensary fees for year ending 31st March, 1936.	£ 915.13. -
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ORDINARY EXPENDITURE :

Personal emoluments.	£8,792.15. 3	
Other charges	<u>£5,422.12. 9</u>	
For year ending 31st March, 1935.		£14,215. 8. 0

Personal emoluments	£9,144.14.11	
Other charges	<u>£7,175.19. 1</u>	
For year ending 31st March, 1936.		£16,320.14. -

Total Expenditure of Protectorate for year ending 31st March, 1935		£141,627. 2. 8
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Total Expenditure of Protectorate for year ending 31st March, 1936		£159,013.16. 9
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Relation of Medical Expenditure to total expenditure for year ending 31st March, 1935.		10.03%
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Relation of Medical Expenditure to total expenditure for year ending 31st March, 1936.		10.26%
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Capital Expenditure.		£ 5,598.10. 8
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Extraordinary Expenditure for whole Territory, including the above Capital Expenditure.		£51,098.17. 5
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SECTION II - PUBLIC HEALTH.

7. The year 1935 appears to have been a serious "carry-over" from 1934. The restrictions of Foot and Mouth disease having to a large extent been removed, the disaster of drought still continued, with the result that cattle died in their hundreds, milk was unavailable and green food-stuffs non-existent. It need hardly be pointed out that this state of affairs acted most detrimentally on the health of the community in general, and one is not surprised that very severe outbreaks of scurvy and other diseases, due to the devitalisation of the population, have had a very serious and possibly lasting, effect on the physical condition of the coming generation. So much, indeed, that certain Medical Officers reported that whole villages were unable to carry out ordinary domestic duties owing to the fact that every member was suffering from scurvy.

The drought continued so far into the year that when this state of affairs became apparent it was most difficult, and in fact almost impossible, to obtain such remedial commodities as oranges, or green foodstuffs to ameliorate the condition of the population in these districts.

8. As far as communicable diseases are concerned, the Protectorate is in an unfortunate position. Certain communicable diseases which are endemic in the Union, but which are not at present discoverable in the Protectorate, have constantly to be guarded against. I refer to such diseases as typhus fever. This has, in certain parts of the Union, been very rife, but fortunately so far has not made its appearance in the Protectorate, nevertheless the Medical Department is

fully alive to the possibilities of its extension into the Protectorate and means can be taken to deal with any outbreak of typhus fever which may suddenly appear within its boundaries.

9. PLAGUE: This disease has caused grave anxiety in the Protectorate. In April plague manifested itself at Zeerust, within a few miles of the Protectorate border. The Union Health Authorities immediately communicated with the then Principal Medical Officer who took steps, in conjunction with the Union Health Authorities, to train the necessary Protectorate personnel in the latest methods of rodent and plague precautions as taken in the Union. This is an excellent example of co-operation between neighbouring territories from a public health point of view, and illustrates the readiness at all times of the Union Health Officials to assist in all matters pertaining to Public Health.

Unfortunately the disease amongst rodents spread to the Protectorate and a plan of campaign was inaugurated to cope with the outbreak. The report of the Protectorate Medical Officer who had been specially trained for plague work by the Union Assistant Medical Officer of Health and subsequently seconded for this duty is given in Appendix "A". This report gives a full and comprehensive picture of the work done in the Protectorate to combat this menace.

10. SCURVY: During the year, owing to the prolonged drought, scurvy became very prevalent, more especially in the Serowe and Francistown areas. The total number of cases treated at the Dispensaries and Hospitals was 248, but this is in no way an indication of the widespread prevalence of this disease, as one Medical Officer

reported that whole villages were unable even to carry on their domestic work owing to all the members being affected. The disease was at its worst so late in the year that it was practically impossible to obtain citrus with which to alleviate the condition, but fortunately the Administration was able to obtain concentrated orange juice from the British South Africa Company, Salisbury.

There is also evidence that when Native fruits and berries became available, the Natives were too indifferent and lazy even to go to the trouble of picking them. Here again we are brought up against the apathy and indifference which permeates the population of the Bechuanaland Protectorate.

The encouragement of Native dairies with the sale of cream for export as its object is of questionable value as far as the health of the Bechuana is concerned. During the summer when milk is plentiful sale is encouraged to the detriment of the health of the children at the period of development when this article of diet is most essential. It is a matter for regret that no scheme has so far been forthcoming for converting surplus summer milk into cheese for issue to children in winter when milk is scarce or unobtainable.

In fact, would it not be worth while to consider the development of some form of "cheese-mindedness" in the Natives of the Protectorate - not from the commercial but from the point of view of home consumption ?

It must, however, be noted with gratification, that school gardens are, thanks to the energy and zeal of the Director of Education, gradually playing an important role in the education of young children, as to the health value of the various vegetables, etc., which can be and are

being grown in the Protectorate. It is also a noteworthy fact that hygiene now forms an important subject in the school curriculum throughout the Territory.

11. RESPIRATORY DISEASES (EXCLUDING PULMONARY TUBERCULOSIS).

During the year, and more especially in July and August, with a renewed outbreak in November, there were very widespread outbreaks of influenza, the total number of cases being 1,818 as against 366 last year. All Medical Officers reported the seriousness of these outbreaks with a special tendency to influenzal pneumonia.

12. TUBERCULOSIS: The following comparative table shows the position of Tuberculosis in its different forms for the last five years :-

	<u>1931</u>	<u>1932</u>	<u>1933</u>	<u>1934</u>	<u>1935</u>
Tuberculosis, Pulmonary and Laryngeal.	180	298	246	216	290
Tuberculosis of the Meninges or C.N.S.	-	-	1	1	2
Tuberculosis of the Intestines or Peritoneum	-	-	5	6	5
Tuberculosis of the Vertebral Column	9	16	23	19	28
Tuberculosis of Bones and Joints.	42	17	11	12	61
Tuberculosis of other Organs :					
(a) Skin or Sub-cutaneous Tissue	4	-	-	5	-
(b) Bones	-	7	9	11	4
(c) Lymphatic System	3	39	87	41	75
(d) Genito-Urinary	-	2	-	6	2
(e) Other Organs	-	1	-	-	-
Tuberculosis disseminated					
(a) Acute	-	-	3	8	1
(b) Chronic	<u>7</u>	<u>3</u>	<u>2</u>	<u>4</u>	<u>-</u>
	<u>245</u>	<u>383</u>	<u>387</u>	<u>329</u>	<u>468</u>

From this it will be seen that there is an increase of 139 cases but it must be borne in mind, however, that certain conditions such as enlarged glands whilst attributed to Tuberculosis may, in reality, be due to Syphilis. This largely depends on experience.

There is no question but that this disease is spreading in the Protectorate, but the contention that this is the result of working at the Mines can hardly be maintained to-day. A number of cases in children and young adults who have never been to the Mines are found suffering from this disease. Whilst originally the disease was introduced from the Mines, it must be admitted that to-day the disease can be and is contracted in the Protectorate itself.

Malnutrition, syphilis and insanitary surroundings play a very important part in the spread of this disease by lowering the vitality of the people, and, living huddled in stadts brings sufferers in close contact with a larger number of people than is, for example, the case in Basutoland.

Compulsory medical examination of all labourers recruited for the Mines is in force in the Protectorate, and in view of the circulated "Suggestions" laid down by the Native Recruiting Corporation which, inter alia, state that "Natives who have crepitations should be rejected as being probably tubercular. Crepitations are frequent causes of rejection on the Rand, and particular attention should therefore be paid to these" it may be presumed that those passed are clinically fit for such work.

By arrangement with the Chamber of Mines a weekly list of Natives repatriated on account of ill health

is sent to each District Commissioner with a view to continuation treatment by district Medical Officers in those cases in which it is required. Unfortunately, long distances, indifference on the part of patients, and apathy of relatives make this a wellnigh hopeless task. As a remedial measure it might be suggested that special pavilions for the treatment of this disease could be erected at all the Government and Mission Hospitals in the Territory, but it is a well known fact that after varying periods in Hospital patients get tired and desire to return to their homes, the result being that owing to adverse nutritional and sanitary conditions the good done in such institutions is rapidly undone; also, when no obvious improvement takes place or when improvement is not as rapid as the patients would wish they insist on returning home. The disease progresses to its inevitable end and meanwhile the infection is spread in their neighbourhood. Not only medical but agricultural, veterinary and educational resources must be brought into co-operation if any measure of success is to crown efforts to combat this disease.

13. SYPHILIS AND YAWS: The total number of cases of syphilis treated during the year was 6,817. This number is lower than in the two previous years, and the following table shows the relationship of the number of cases as compared with the total number of first attendances of outpatients:

	Number of cases of Syphilis.	Total number of outpatients First attendances.	Proportion of Syphilitics to Outpatients.
<u>1933</u>	9,143	22,815	40%
<u>1934</u>	7,163	22,194	27%
<u>1935</u>	6,817	27,661	25%

From this table it cannot be said that the disease has in any way decreased, but the apparent decrease is probably due, in a certain measure, to the prolonged drought causing difficulty of transport and thus inability of patients to come to the various Dispensaries and the fact that the people spent a much longer period than usual at the cattle posts.

It is, however, gratifying to note that the Natives themselves appear to be awakening to a sense of the disastrous effects which follow in the trail of this disease. The great distances between Dispensaries and Hospitals make it impossible for a large proportion of those suffering from this disease to present themselves for treatment. It is, however, hoped that with the extension of Medical Services, i.e. by increasing the number of outstation dispensaries and extensive use of travelling dispensaries, to reach a greater number of patients. It is, however, a regrettable fact that when, with treatment, the external manifestations of the disease have disappeared patients do not consider it necessary to present themselves for further treatment essential to the cure of the disease.

The year 1935 accounted for 64 cases of Yaws as against 85 in the previous year. If great advances are to be made in the treatment of these diseases it will be necessary for a more liberal supply of arsenical preparations to be available for use in the Medical Department more especially in view of the increased personnel and consequent increase in the number of patients.

14. GONORRHOEA: The following table shows the comparative number of cases for the last five years :

<u>1931</u>	<u>1932</u>	<u>1933</u>	<u>1934</u>	<u>1935.</u>
232	412	423	392	892

From this table it will be seen that the number attending for treatment is more than double that of the previous year. This is, if it might so be called a healthy sign in that this disease has hitherto always been looked upon by the Natives as a very mild malady. Quite a large number of them still do not consider it necessary to consult a doctor unless such complications as stricture, epididymitis, etc. set in.

Unfortunately with this form of venereal disease it is the woman who more frequently attend the dispensaries because of sterility, and by far the largest number of cases of salpingitis met with may be attributed to this disease.

15. MALARIA: With regard to malaria it is to be noted that there was no exceptional or heavy outbreak in any part of the Protectorate during the year. This can be seen from the fact that there were 6,153 cases in the year 1934, whereas the number during the year under consideration was only 835. This was only to be expected in view of the fact that malaria is largely dependent upon the rainfall, and there can be no doubt that the prolonged drought of 1935 militated against any extensive outbreak of this disease.

In Ngamiland where Malaria is endemic the number of cases (mostly of benign tertian) were, to all intents and purposes, the same as for the year 1934. Taking into consideration the widely varying climatic and other conditions in the Protectorate which cause irregular outbreaks of malaria, it is practically impossible, if

even from a financial point of view, to engender in the population a malaria sense such as occurs in areas where the disease may be considered as recurring annually, so that attempts at the control of malaria by anti-larval and anti-adult mosquito methods is, except in exceptional circumstances, useless in the Protectorate.

16. SLEEPING SICKNESS: As was mentioned in the report for 1934 the Administration thought it advisable, before taking active measures to deal with sleeping sickness in the suspected areas, to obtain the services of a Medical Entomologist with experience of this particular disease. Representations on these lines were made to the Dominions Office and it was arranged that Dr. W.A. Lamborn, O.B.E., Medical Entomologist, Nyasaland Protectorate, should be seconded for two months to carry out investigations into sleeping sickness. Dr. Lamborn was for nearly two months in the Tsetse Fly belt in the Northern Protectorate and it is reassuring that during the whole of his investigations no cases of sleeping sickness were found. With the receipt of Dr. Lamborn's report, steps were at once taken to carry out the recommendations embodied therein (see Appendix "B").

17. BILHARZIA: There has been a reduction in the number of cases of Bilharzia treated during the year, from 101 to 62. Again, most of these cases, namely 58, were from the Bakgatla Reserve; the remainder were from various stations in the neighbourhood and in all probability had been infected in the neighbouring Bakgatla Reserve. The Medical Officer of Ngamiland (stationed at Maun) made repeated investigations as to the possibility of bilharzia being present in that district, but without result, so that it may be taken that the Bakgatla Reserve is at present the only source of infection in the Protectorate.

18. MEASLES: 186 cases of measles were reported during the year, the largest number reported being Maun in Ngamiland (75) Molepolole (54) and Francistown (37).
19. WHOOPIING COUGH: 268 cases of Whooping Cough were recorded during the year, by far the greatest number being at Francistown (102) and Kanye (95).
20. DYSENTERY: There was an increase in the incidence of this disease from 116 in 1934 to 299 during the year under review - the greatest numbers being at Mochudi (89) Kanye (62) and Lobatsi (63).
21. LEPROSY: Twelve new cases of keprosy presented themselves for treatment - nine of whom were seen by the Medical Officer, Maun, Ngamiland at outstations which he visited. These were very advanced and apparently old standing cases.

At present it is estimated that there are about 50 lepers in the Protectorate, but it is hoped in time, with the work carried out by the travelling dispensaries, to obtain more accurate data.

SECTION III - VITAL STATISTICS.

22. The census of 1931 showed a total Native population of 152,140. A census will be taken next year, when it will be possible to ascertain the increase or decrease of the Native population.

The following figures obtained from the District Commissioners give the statistics, as far as possible, with regard to Europeans :-

Total European population (estimated)	1,754
Total European births	29
Total European deaths	19
European birthrate per thousand	16.5
European deathrate per thousand	10.8

SECTION IV - SANITATION AND HYGIENE.

23. A step forward in the Protectorate is the authorising of the appointment of a European Sanitary Inspector who will have under him four Natives for training as Sanitary Inspectors, and it is hoped that gradually sanitary conditions of the villages and stadts in the Protectorate will improve. Here again we are up against native conservatism. "What was good enough for our great grand-fathers, grandfathers, and fathers is good enough for us, therefore, why the necessity for protecting our wells which was not done in the past, why the necessity for burying our refuse, why the necessity for particular care in the disposal of excreta, etc. ?" This attitude of the Natives can only be overcome by years of patient endeavour on the part of the Medical Department and rapid advancement of the Education Department especially in hygiene so as to instil into the minds of the coming generation the necessity for the carrying out of the most elementary and essential rules of health.

24. SOCIAL AND WELFARE WORK: The social and welfare work centre conducted by the European Welfare Nurse at Serowe is developing beyond all expectations. During the year 958 huts were visited for the purpose of giving assistance in maternity, sickness, etc., as against 508 the previous year. An ante-natal clinic is held weekly and no fewer than 240 women attended during the year. Up to the end of 1935 123 children were born to the women who attended the ante-natal clinic (56 females, 49 males, and two pairs of twins were among this number) There were 12 mis-carriages and four still births.

A great step forward in connection with child welfare and maternity work at Serowe has been the building in the Mission Compound of two huts; one as a maternity hut and the other as a Native Nurse's quarters. All due credit must be given to the Chief for the interest which he took in the erection of these huts. He called out a "regiment" of women to build them and the need of them has been amply justified by the results since their erection as the women are now taking far more interest and are far more anxious to be delivered in the maternity hut.

The Welfare Officer herself delivered 66 of these babies and her Native Maternity Nurse delivered 13. All these mothers, with the exception of 14, were members of the ante-natal clinic.

The women's hygiene class was held weekly between June and September and the women were given simple instructions for dealing with the various emergencies which might arise in confinements, such as miscarriages post-partum haemorrhage, retained placenta and treatment of prolapse of the cord, etc. It is worthy of note that the continued successful work of this Welfare Officer is gradually breaking down the aversion of the Native women to be confined beyond the limits of their own huts and shows clearly that her influence amongst the women is gradually gaining ground against superstitions and ignorant apathy.

25. The German Lutheran Mission at Remoutsa Village is carrying on work of a similar nature there, through the efforts of a trained European Nurse.

26. The unhealthy conditions under which the Bechuana live, by congregating in large villages or stadts, have

been repeatedly emphasised in previous reports. This in a great measure to-day, is probably due to the availability of water supplies, but the mere fact of congregating in stadts of dimensions which vary from 3,000 to 20,000 inhabitants has its drawbacks. Such a large number of people are unable to keep their cattle near them, there is also insufficient ground for the growing of green foodstuffs and therefore, of necessity, the people in general, and the children in particular, suffer from a lack of these very necessary essentials to health. Further, infectious or communicable diseases spread much more rapidly amongst them than is the case amongst a people like the Basuto, whose villages are more scattered with areas of country between them.

The problem of sanitation in these villages is, without great expenditure, almost insuperable, and it is thought that by developing water supplies at distances from these main villages in time these huge unwieldy and unhealthy stadts may be broken up into smaller villages which could be coped with more easily from a sanitary and hygienic point of view.

SECTION V - HOSPITALS AND DISPENSARIES.

27. The total number of attendances at the Government and Medical Mission Hospitals and Outstations was 57,836. Of these 27,662 were first attendances, being an increase of 2,336 over 1934. It is therefore justifiable to conclude that the Medical Officers and the Hospital Staffs are gradually winning the confidence of the people, for, in spite of the adverse circumstances which obtained in the Protectorate during the year, the

number of attendances has increased. The following table shows the number of attendances at each Station :-

<u>STATION</u>	<u>FIRST ATTENDANCES</u>	<u>SUBSEQUENT ATTENDANCES.</u>	<u>TOTAL</u>
LOBATSI	2,696	2,393	5,089
GABERONES	1,032	1,541	2,573
SEROWE	4,892	8,356	13,248
FRANCISTOWN	3,979	3,733	7,712
NGAMILAND (including Ghanzi and Kalahari)	2,418	3,266	5,684
MAFEKING	811	229	1,040
KANYE	6,061	1,343	7,404
MOCHUDI	2,807	2,807	5,614
MOLEPOLOLE	<u>2,966</u>	<u>6,506</u>	<u>9,472</u>
TOTAL	<u>27,662</u>	<u>30,174</u>	<u>57,836</u>

With the advent of Travelling Dispensaries more outstations can be opened up and therefore a great number of the population who have been beyond medical assistance will be in a position to obtain it and thus, gradually, by extending the scope of these dispensaries, we will bring the scattered centres of the population within the sphere of influence of modern medicine, materially assisting in the treatment of such diseases as are undermining the health of the Bechuana.

28. HOSPITALS: The number of inpatients who received treatment during the year was 1,756, an increase of 558 on those of 1934. The number of operations performed was 367 of which 113 were major operations.

The following table shows the number treated at each station in 1935 as compared with 1934 :-

	<u>1934</u>	<u>1935</u>
LOBATSI	472	577
SEROWE	350	347
FRANCISTOWN	44	160
NGAMILAND	-	66
KANYE	176	389
MOCHUDI	71	64
MOLEPOLOLE	<u>85</u>	<u>153</u>
	<u>1,198</u>	<u>1,756</u>

During this year a new Hospital was built at Francistown, comprising accommodation for four European and 18 Native patients. This Hospital was opened on the 21st August by Mrs. Reilly, wife of His Honour the Acting Resident Commissioner, and it is clear from the interest shown at the opening of this Institution by both Europeans and Natives that the necessity for it had been long overdue.

The Staff consists of a Medical Officer, two European Nurses, and a Native Staff. Whilst the Hospital was opened in August this year, there is naturally still much to be done to make it a completely self contained Institution. This, of course, can only be done gradually during the coming years.

29. MEDICAL MISSIONS: Excellent work is being done by the various medical mission Hospitals and Dispensaries in the country. Kanye (Seventh-Day Adventist Mission) and Molepolole (United Free Church of Scotland) are doing excellent work. Mochudi (Dutch Reformed Church) is doing excellent outpatient work, but owing to lack of funds, is not able to do the amount of work which it might do were the Hospital brought more up to date and better equipped.

The close co-operation and good fellowship which exist between the personnel of these various Mission Hospitals and the Administration augurs well for future Medical work in the Protectorate.

Attention must be drawn also to the Medical work which is being done by the Roman Catholic Mission at Khale. From the latest report sent to me by the Bishop of Kimberley the number of patients seen at Khale and the two out-stations which are visited, namely Gabane and Ramoutsa, total 8,125. From these figures it would appear that this Mission is also serving a useful purpose in extending Medical work in the Protectorate.

Both Medical Missions at Kanye and Mochudi receive an annual subsidy of £200. 0. 0 a year for which they give free treatment to cases of Syphilis, in addition to medico-legal work and other duties performed by them for the Government. When the amount of work done by these Missions is taken into consideration it is obvious that the work done far exceeds the remuneration represented by the Government subsidy.

30. AUGMENTATION OF MEDICAL SERVICES.

As will be seen from the report for 1934, recommendations were made for the extension of Medical Services in the Protectorate. These met with sympathetic consideration and were approved by the Secretary of State for Dominion Affairs.

The appointment of three Medical Officers, a Sanitary Inspector and the purchase of two Travelling Dispensaries was authorized. The Travelling Dispensaries are being built in Johannesburg and on completion will be utilised for the extension of Medical work in the Kalahari and other outlying regions in the Protectorate.

In Ngamiland a well-equipped 20 bed Hospital is in course of erection by the Seventh-Day Adventist Mission. This Hospital will have two doctors attached to it and will be staffed by one European Nurse and Native Nurses. This Hospital will serve a population of approximately 9,000. The Doctors will pay periodic visits to the outstations which were previously visited by a Government Medical Officer.

At Sofala in the Tswapong area the London Missionary Society are erecting a small Hospital with one Doctor, European Nurse and Native Staff. The lack of a suitable water supply has delayed the erection of this Institution, but it is hoped this difficulty will soon be overcome.

The building of both these Hospitals has been made possible by a generous grant from the Colonial Development Fund and annual subsidies from the Government will materially assist in their maintenance.

31. CHAMBER OF MINES GRANT: During the year 1934 the Chamber of Mines donated a sum of £10,000.0.0 to the High Commission Territories for the purpose of training Native Nurses. The proportion of this amount allocated to the Bechuanaland Protectorate is £3,000.0.0.

A scheme put forward by Dr. Dyke and approved by the Secretary of State in 1935 was inaugurated and preliminary appointments made. The question of obtaining suitable persons for training is one of the difficulties confronting the scheme; whilst there are a number who are apparently suitable, it is found after commencement of the course that many prove for various reasons unreliable and it will only be by a process of elimination that a trained personnel will eventually be available.

The scheme is at present in an experimental state but is sufficiently elastic to allow of modification if this proves to be necessary.

32. OFFICIAL VISITS: During the year His Excellency the High Commissioner Sir William Clark, K.C.S.I., K.C.M.G., accompanied by Major Reilly, C.B.E. the Acting Resident Commissioner visited the Territory and inspected the Hospital at Lobatsi and also the new Hospital at Francistown which was still under construction.

The Principal Medical Officer paid several visits to Lobatsi, Gaberones, Molepolole, Mochudi, Serowe and Francistown, also visiting the most northerly part of the Protectorate, Kasane and Kasangula, in connection with the investigation of Sleeping Sickness undertaken by Dr. Lamborn of Nyasaland.

SECTION VI - PRISONS AND ASYLUMS.

33. PRISONS: There were 947 prisoners in the gaols throughout the Protectorate during 1935. The general health of the prisoners was good, there being only four deaths amongst them during the year. Only two prisoners were released on the grounds of ill health.

34. ASYLUMS: As has been stated in previous reports there is no asylum in the Protectorate, dangerous lunatics being transferred to the Mental Hospitals in the Union of South Africa. There are at present two European and seven Native mental patients under detention.

In view of the financial position of the Protectorate it is questionable if the erection of a Mental Institution is justifiable for harmless mentally affected patients. At present the relations are responsible for their maintenance, but should an Institution as mentioned above be brought into being the relations would most certainly seek to throw the burden of their responsibilities on the shoulders of the Administration. It is therefore considered inadvisable at this juncture to alter the policy at present in existence.

J. W. STIRLING.

PRINCIPAL MEDICAL OFFICER.
BECHUANALAND PROTECTORATE.

MAFEKING.

PLAGUE CAMPAIGN, 1935.

Rodent Plague having been discovered during the early part of 1935 in that part of the Western Transvaal which is close to our borders, it was anticipated that sooner or later this disease would make an appearance in our territory, and it was therefore decided to have three Europeans specially trained in rodent surveys and rodent destruction measures under Officials of the Health Department of the Municipality of Johannesburg.

While arrangements for this were still being made an outbreak of human plague occurred at Linokana in the Western Transvaal, about 20 miles from Lobatsi. Dr. Fourie, Assistant Health Officer in the Union Health Department who had with him Chief Rodent Inspector Chivers of the Union Health Department, was in charge of the outbreak and informed the Bechuanaland Protectorate Administration of the occurrence of cases of human plague. He suggested that as Linokana was so close to our borders it could be fairly assumed that there was already rodent plague in our territory and, consequently, a danger of human plague. He further suggested that the three Europeans who were to be trained as Rodent Officers should be sent to Linokana to be trained under himself and Mr. Chivers, as he considered that a training at the seat of an outbreak, in a typical Native village, would be more suitable for conditions in our territory than a course of instruction in Johannesburg. His suggestion was acted upon and Rodent Officers Erasmus, Cronje and Dodd, and I, as Medical Officer to be in charge of plague precautions for the territory, were sent to Linokana for a course of instruction.

On April 8th, 1935, just prior to our leaving for the Union for our course of instruction, Dr. Fourie and Mr. Chivers, at the request of this Administration, came over to Lobatsi to give a public lecture on plague and a practical demonstration on the extermination of rodents. Dr. Fourie first lectured the Europeans and afterwards the various Native Chiefs who had been specially requested to proceed to Lobatsi for this meeting. He told the meeting that on his way over from Linokana that morning he had made a rodent survey and had discovered that there was a definite epizootic of rodent plague in progress at that moment in the territory which he had traversed. He stated, furthermore, that as there was definitely rodent plague, there was thus a danger of the occurrence of human plague. After the meeting the three Rodent Officers and I proceeded to Zeerust which was to be our headquarters.

COURSE OF INSTRUCTION: Our course of instruction lasted ten days during which time we had a very intensive training. Amongst other things we were taught how to inspect buildings and huts for rodents and how to deverminise them with Cyanogas. We also received instruction on the identification and habits of rodents and how to judge signs of rodent mortality and activity, and I saw a few cases of Bubonic Plague. In short we had a most intensive course of instruction on the prevention and treatment of human plague.

During this course Dr. Fourie, Mr. Chivers, our three Rodent Officers and I proceeded to make a rodent plague survey from Zeerust to Lobatsi and thence to Gaberones, Molepolole and Mochudi. All along the

routes surveyed we found that there had been extensive mortality amongst the veld rodents and the cause of this mortality was rodent plague. At Mochudi the discovery of a dead multimammate mouse showing microscopic signs of plague clinched our findings.

PLAGUE LECTURES TO INHABITANTS OF TERRITORY :

In the meantime the Principal Medical Officer had proceeded to Ramoutsa, Gaberones and Mochudi and at each of these places had addressed both Europeans and Natives on the plague menace. He familiarised them with the causes, symptoms, prevention and dangers of plague, outlined to them the Administration's probable plan of campaign in preventing human outbreaks and requested them to give every assistance to Rodent Officers. Particular stress was laid on the importance of early notification of the disease, if suspected, and of reporting to the nearest Government Official the discovery of dead rodents. Subsequently lectures were given either by the Principal Medical Officer or myself at Good Hope, Serowe, Kanye and Molepolole, and by Dr. Drew at Francistown and Tsessebe.

PLAN OF CAMPAIGN:

My course of instruction having been completed, I proceeded to Mafeking on April 17th to report and to discuss a plan of campaign with the Principal Medical Officer. Briefly the following measures were decided upon :-

NATIVES: To attempt to deverminise with Cyanogas all huts, granaries and their immediate environs in all Native villages where there were signs of rodent plague. The Administration to supply a certain number of Cyanogas

pumps and Cyanogas free of charge to the various Tribes. The Rodent Officers to proceed from village to village in their allotted areas and on arrival at any village to commence Cyanogassing there. The Chief or Headman of any village was expected to provide the necessary Native labour free of charge to work the pumps. After the Rodent Officer had demonstrated to the Natives the use of the Cyanogas pump the Natives were expected to carry on with the Cyanogassing of their village periodically, supplies of Cyanogas to be obtainable free of charge from the Magistrate of the District. Any pumps required by any tribe over and above those supplied free by the Administration to be purchased from the Administration at cost price.

The distribution of pumps to the various Tribes was as follows :-

Barolong	2 pumps
Bangwaketse	2 pumps
Bamelete	2 pumps
Batlokwa	2 pumps
Bakgatla	2 pumps
Bamangwato	6 pumps

VETERINARY: To obviate any risk of infected rodents or fleas being carried by rail it was decided to disinfect with Cyanogas all consignments of grain and hides immediately prior to export, and Rodent Officers instructed Officials of the Veterinary Department in the use of the Cyanogas pump for this purpose.

GOVERNMENT PREMISES: As regards Government Stations, all premises, grain and store-rooms, gaols, etc. and their immediate surroundings to be disinfested every

ten days and arrangements were made for a Native Constable to be trained at each Station and specially detailed for this duty.

RAILWAY PREMISES: The South African Railway Department, having been informed of the presence of rodent plague in the territory, immediately sent one of their Rodent Officers who proceeded to disinfest railway premises throughout the territory.

TRADING STORES AND PRIVATE DWELLINGS: All European Traders and Farmers to be urged to purchase pumps and Cyanogas from the Administration at cost price and Rodent Officers to demonstrate to them the use of the pumps and also methods of keeping their buildings rodent free.

SURVEYS: It was decided that, pending the arrival of equipment for the campaign, Rodent Officer Dodd and I should carry out surveys in order to establish exactly how far into the territory and in which directions the epizootic had spread. Rodent Officer Dodd surveyed from Lobatsi to Palapye Road via Tuli Block, at the same time instructing the farmers there in the use of the Cyanogas pump for rodent destruction, and from Palapye Road in a north-westerly direction as far as Chukutsa Pan. I surveyed from Ramatlhabama to Lobatsi and, in company of Dr. Drew of Francistown, from Francistown to Ramaquabane which is on the Bechuanaland Protectorate - Southern Rhodesia border. Rodent Officer Dodd's and our findings were the same; viz. extensive rodent mortality all the way due to rodent plague. We had now established the fact that as far as our own surveys had taken us the epizootic had spread from our Cape Border to the

Southern Rhodesia Border from south to north and from the Transvaal Border on the east to Kanye and Molepolole on the west.

In view of the fact that rodent plague had been found to exist on the Bechuanaland Protectorate - Southern Rhodesia border the Southern Rhodesia Government was notified and I was subsequently seconded for a short time to instruct Officers of that Administration in all branches of plague work.

HUMAN OUTBREAKS: The first case of Bubonic Plague occurred in a young Native boy at Good Hope on April 19th, 1935. The Principal Medical Officer, accompanied by Dr. MacKenzie of Lobatsi, had gone to Good Hope to address the Natives on plague. After the lecture the Chief requested the Principal Medical Officer to examine a Native who was stated to be seriously ill. It was found that the case was suffering from Bubonic Plague. Immediate treatment was given and the boy made an excellent recovery. A Rodent Officer was sent immediately to Cyanogas all Native Huts there, and I went to investigate the outbreak on April 22nd and discovered another case of Bubonic Plague. This was in an adult Native male. Prompt serum treatment was given and the case made an uninterrupted recovery. A survey around Good Hope showed that there was extensive epizootic of rodent plague in progress at the time. These were the only two cases which occurred, to our knowledge, in the territory, and it was largely due to anticipation, prompt deverminising and rodent destruction measures that further outbreaks were prevented.

DEVERMINISING BY RODENT OFFICERS: All equipment having arrived, our Rodent Officers proceeded with the plague

prevention campaign. In view of the fact that the epizootic was more widespread than had been anticipated it was found necessary to take on two more Rodent Officers; viz. Messrs. Harbor and Palmer. These men were given a short course of training under Rodent Officer Cronje. Each Rodent Officer had two Native Assistants who were paid by the Administration. Other assistance they received was given gratis by the various Tribes. I visited each Rodent Officer, except Rodent Officer Palmer, periodically, to see that the work of Cyanogassing was progressing favourably and to schedule. Rodent Officer Palmer acted under the instructions of Dr. Drew of Francistown as it was felt that the Tati area could be better worked under the surveillance of the Medical Officer on the spot. The other Rodent Officers, except Rodent Officer Dodd, were each supplied with waggon transport to enable them to transport their personal effects, equipment, pumps and Cyanogas. Rodent Officer Dodd, in view of the fact that he had the Bamangwato Reserve, the largest District, to work, was supplied with a light motor van to enable him to perform his duties more expeditiously.

The Rodent Officers proceeded with the work of Cyanogassing and deverminising as follows :-

Rodent Officer Cronje: After giving Rodent Officer Harbor one week's course of instruction he proceeded to Cyanogas all Native huts and granaries in the larger villages of the following Native Reserves: Batlokwa Reserve, Bamalete Reserve, and parts of the Bangwaketse and Bakwena Reserves. As it was impossible for him to do every village he confined himself to the largest. He was given every assistance by the Natives of the villages

in which he worked and altogether Cyanogassed 5,387 huts and granaries.

Rodent Officer Erasmus Cyanogassed huts in the following Native Reserves: Barolong, Bangwaketse and Bakwena.

He received every assistance from the Natives except at Kanye, in the Bangwaketse Reserve, where the Chief, in spite of representations from various sources, refused to co-operate. He was greatly assisted in the Bakwena Reserve where the Chief supplied ten permanent labourers who travelled around with him from village to village. These men were paid by the Chief from his own pocket and altogether Rodent Officer Erasmus Cyanogassed 3,089 huts and granaries.

Rodent Officer Dodd who had to operate in the biggest Native Reserve of all, the Bamangwato Reserve, was able to work very expeditiously because of the wholehearted support which he received from the Tribe as a whole and through the use of motor transport. Commencing at Serowe he proceeded to Madinare, to Shoshong, Palapye Road, Mahalapye and the scores of villages along the Chwapong range of mountains. Altogether he Cyanogassed 20,385 huts.

Rodent Officer Harbor was in charge of Cyanogassing operations in the Bakgatla Reserve and Cyanogassed all huts in the larger villages of this Reserve as well as many smaller hamlets as he proceeded from one village to another. Altogether he Cyanogassed 5,255 huts and granaries.

Rodent Officer Palmer worked the Tati District where, owing to the fact that the villages are small and scattered he worked very rapidly. He Cyanogassed 5,070 huts.

Altogether a total of 39,186 huts was Cyanogassed. Likewise Cyanogassing was carried out at eleven Government Stations, at four Mission Stations, and at ten centres private dwellings and stores were Cyanogassed periodically.

As has been mentioned before, each Tribe was supplied with a certain number of pumps and Cyanogas free of charge, and it was hoped that after Rodent Officers had Cyanogassed each Tribal area the Natives themselves would co-operate by Cyanogassing their own villages periodically. It was disappointing to note, however, that in very few cases was this done. No sooner had the Rodent Officer completed work in a village and left than the residents settled down and took no further measures in the majority of instances.

CLOSING OF CAMPAIGN: By the end of July, 1935 nearly every Native Village where rodent plague had been in the southern Protectorate and the Tati District had been Cyanogassed and was therefore practically rodent free. By this time too it had been noticed that the mortality amongst veld rodents had definitely passed its peak and that they were showing signs of breeding up again. The latter fact was an indication that there was much less danger of human plague occurring in the near future and for this and for financial reasons it was decided to close the campaign. Consequently all Rodent Officers, with the exception of Rodent Officer Dodd, were discharged during the early part of September. Rodent Officer Dodd, who had the largest area to operate and who still had another month's work to do before he could complete his area, was discharged at the beginning of November.

GENERAL.

Since the discharge of the Rodent Officers I have been doing surveys myself in conjunction with my other duties whenever time and opportunity have allowed, and everywhere along the routes surveyed there are definite signs that rodents are breeding up and no signs of mortality.

It has been definitely established or fairly definitely so, that rodent plague first commenced in the Southern Protectorate about September, 1934, although we were not aware of its presence until April 1935, also that the epizootic had spread in from the Western Transvaal.

Usually it takes from eight to twelve months for an epizootic of rodent plague to burn itself out, and as it is now over a year since rodent plague started in the Southern Protectorate, it can be fairly safely assumed that nearly all danger of human plague is over for the present. An epizootic of rodent plague kills off about 90% of veld rodents, mainly gerbilles. It takes about three years for the 10% remaining to breed up to their normal density of population, and, when this has taken place, plague again breaks out, so we may therefore expect another epizootic of rodent plague in about three years' time.

It is possible of course that during the next three years cases of human plague may occur, but I am definitely of the opinion that there is slight likelihood of an epidemic during that period.

As regards the Northern Protectorate, the epizootic there has been partially a continuation of the epizootic from the Southern Protectorate and partly of the epizootic

from South West Africa, and, generally speaking, was of more recent occurrence than in the remainder of the territory. This was established when a survey was completed in this area during June and July, 1935. Although no survey of this area has been made since that date, there can be little doubt that here too the epizootic will have long since passed its peak, and that breeding up of rodents will have commenced by now. In fact during the survey of June and July there were definite signs of breeding up in isolated patches, and thus again, in the Northern Protectorate, for reasons similar to those applying to the Southern Protectorate there is slight danger of the occurrence of human plague during the next three years.

Considering how extensive was the epizootic of rodent plague and the overcrowded and insanitary conditions under which the majority of our Natives live, it is indeed surprising that only two cases of human plague should have occurred in the whole territory. We are indeed more fortunate than our neighbours in the Union where, despite herculean efforts to prevent the disease, isolated human outbreaks are almost a daily occurrence, and it is to be hoped that through the next epizootic which is bound to occur in two to three years time, we will be as fortunate as we were in the last.

M. GERBER

MEDICAL OFFICER.

GABERONES

24th January 1936.

REPORT BY W.A. LAMBORN, O.B.E., M.R.C.S., L.R.C.P.,
MEDICAL ENTOMOLOGIST, NYASALAND PROTECTORATE,
ON THE INCIDENCE OF SLEEPING SICKNESS IN NGAMILAND,
BECHUANALAND PROTECTORATE.

GENERAL ACCOUNT OF THE PROBLEM: Rumours of the occurrence in the fly area of the Okovango swamps in Ngamiland of a disease known to the Natives as "KGOTSELLA", the symptoms of which have been thought to be suggestive of Sleeping Sickness, have been current for many years. So long ago as 1909 Dr. Moffat, C.M.G. who had had previous experience of this disease in Uganda was engaged for three months to make investigations; in 1910 Dr. James also with experience in East Africa, was stationed in close proximity to the swamp, at Tsao, for a similar purpose, since when Drs. Batchelor, Macintosh and Skinner who were successively posted to Maun endeavoured to secure cases for investigation. None were able to obtain in that region any evidence supporting the rumours. In November of last year, however, a positive diagnosis of Sleeping Sickness was made by Dr. D. J. M. MacKenzie, the Medical Officer at Maun, in the case of two Native constables who had been on patrol through the northern fly area which, roughly, follows the right bank of the Chobe (Linyanti) River and is distinct, so far as I can learn, from the fly area of the swamp to the south. The existence of other cases among Natives in this area was, furthermore, reported on 30th, April in the present year by Sergeant Fox of the Protectorate Police, on information given him by a Native constable who had patrolled it.

Immediately the first two cases were discovered it was considered by the Government imperative that the services of a medical man having special experience should be obtained so that the incidence of the disease

might be ascertained as a preliminary to the formulation of recommendations towards its control, and for this purpose my services were lent by the Government of Nyasaland on the application of the Bechuanaland Government at the suggestion of the Principal Medical Officer, and with the approval of the Secretary of State.

ITINERARY, AND INVESTIGATION CARRIED OUT IN THE COURSE OF IT.

I left my headquarters in Nyasaland by car on the 4th June, arriving at Salisbury on the 6th. From there I proceeded by train to Bulawayo where the Principal Medical Officer, Dr. J.W.Stirling, had kindly arranged to meet me, and we journeyed together by train to Livingstone, arriving in the early morning of the 9th being met by Mr. R.Sullivan, the Acting Resident Magistrate at Kasane, Chobe District.

The meeting proved to be a great advantage, for we were able to go through and discuss various papers bearing on the problem, so that I was enabled to get a clearer concept of the investigation required and so to formulate plans.

I left Livingstone for Kasane on the 11th with Mr. Sullivan, a Government lorry in the charge of a European driver following. On the 11th I proceeded in this to Kachikau, to which place Mr.Sullivan brought in Mr. H.Norwebb as guide and interpreter for me. I had decided to make for Maun, the administrative centre of Ngamiland, in the first place so that I might obtain from the Resident Magistrate, Captain J.Potts, the latest information bearing on the situation and obtain his advice as to the best way of reaching the fly areas at the present season. To Maun, accordingly, we went arriving on the 13th.

Captain Potts called in and questioned the Headman, one Mochwa-Khumo, from the fly infested region to the east of the swamp, eliciting that "some years ago there used to be quite a large village at N'Dombo, but since 1930 a good many people have died out from a sickness thought by the people to be Kgotsella, the symptoms of which were swelling of the abdomen and sleepiness so that they often fell asleep while actually eating". This man stated further that in the fly area, at the bifurcation of the Gomoti and Santadibi Rivers, there were formerly Masarwa who all died out from, he thought, Kgotsella so that the district is uninhabited to-day.

I set out for this region on the following day, the 14th, encountering in the fly area at a distance of about seventy miles in a north easterly direction two wandering bands of Makuba who had come there from Sankooi to hunt. These people were not able to afford any information, and the headman of three other villages in that region who had lived there many years stated that they had never heard of Kgotsella, and that though it was true there had been a small village at N'Dombo the people had merely left it and gone elsewhere. They knew nothing, nor did any of the several other Natives of whom enquiry was made, of the deaths said to have occurred along the Santadibi.

I examined all the Natives comprising these communities, the total population within that part of the fly area as far as we could learn, 176 in all, without finding any indications of Sleeping Sickness, taking blood films for examination also, and then returned to Maun which we reached on the 6th July.

I examined the films in due course; all were negative.

We then set out for "Chiefs Island" by way of Tsao and Nokaneng, for owing to the lack of water in the southern part of the swamp it was not possible to get across in that direction.

At Nokaneng we met Mr. A. W. Wright, a store-keeper, who had been resident there for many years, and he informed us of a Native report by Natives that there was an actual case of Kgotsella in a village about sixty miles to the north, to which accordingly we made our way.

The alleged sufferer, a woman of about 50, named Chumwa, was among the Natives who greeted us on arrival. She stated that some three years ago she lost her appetite, became feeble and was very drowsy from time to time, but was now better. She had at no time been in a fly area. I examined her blood forthwith: it proved to be negative, and she had none of the signs and symptoms of Sleeping Sickness.

We then set out in canoes for Chief's Island, reaching it on the third day, in the neighbourhood of Chabatsili's. This man, aged about 40, who had lived on the island all his life, stated that he had heard for many years rumours of the existence of Kgotsella, but had never actually seen a case, and other middle-aged Natives from other villages made similar statements. When questioned as to the report that numerous persons had died on the island from the disease they scoffed at it, saying that though it is true the southern part is no longer inhabited the people had left mainly from the difficulty of keeping cattle owing to the spread of the tsetse and the annoyance the flies caused them. Headman Moshuga, living on the mainland, whom I questioned subsequently, confirmed these statements as did Mochwaetse

and his brother, prominent Natives and our guides, and various Natives on other islands, including Nohane on Xgara.

I examined all the Natives now on Chief's Island in the villages bordering the fly area, 80 in all, and took blood films without discovering any evidences of Sleeping Sickness.

Incidentally, I was informed by Mr. Pretorius who acted as guide to a party of engineers in the course of a recent trip to the south-western side of the island of the correctness of the Native report that there are now no people in the fly-infested part of it.

When we were among the islands further information concerning a second Native, one Thobolo living at Xganxane, said to be suffering from Kgotsella reached us, by express messenger from Mr. Wright who had been informed of it by headman Moshuga. We went there accordingly. I found the alleged sufferer to be an old man who had actually sat at our camp fire a few days previously, when he had asked for medicine wherewith to wash his eyes in the hope that his failing sight might be improved. According to Native report, as furnished by Mr. Wright, "during meals he just goes into a sleep and also during conversation he just drops off", but the old man stated that except for occasional pains in his legs he felt well enough, that he had not had fever for many years, and that he had never been in a tsetse area. His blood proved to be negative.

A further rumour from Native sources reached us as we returned through Nokaneng, to the effect that another Native, a youth named Tinehu, suffering from Kgotsella lay at a village called Mabila about fifteen miles from Tsa. We went there accordingly, only to learn that he had fully

recovered from his indisposition and had left for a destination unknown in some other part of the country.

We there learnt of a fourth Native who was said also to be suffering from Kgotsella, and to be lying a few miles from Maun. We found that this man had been taken into Maun hospital where he had been under the care of the Medical Officer, Dr. M. L. Freedman, who thus refers to the case in his Routine Station Return for the month of May :-

"It was reported to me that a Native male adult was suffering from Sleeping Sickness in a stad five miles from Maun. I went out to investigate and brought him into Maun for investigation. Clinical examination failed to reveal any physical signs except a general weakness due, in my opinion, to repeated attacks of malaria. Blood films repeated on no less than four occasions failed to reveal trypanosomes, but a few malaria parasites were seen. When last seen the patient was recovering".

CONCLUSIONS IN REGARD TO SOUTHERN FLY AREA:

I obtained no evidence at all, therefore, of the existence of Sleeping Sickness in any part of the southern fly area. It is indeed open to doubt whether cases have ever occurred in it, except possibly at N'Dombo, now deserted; for I attach no importance whatever to Native opinion. It would obviously be quite impossible for them to differentiate between Sleeping Sickness and the various other conditions such as enteric, malaria and tick fever which may simulate it, and they apply the term "Kgotsella" loosely to indefinite symptoms which are due possibly merely to malnutrition, debility following malaria and similar affections, or even to the presence of intestinal parasites (the condition of the blood of many suggesting such infestation). Apart from this it is difficult to believe that, had Sleeping Sickness previously occurred,

the five medical men who successively made search for cases would have failed to discover them.

In the present instance the truism that the wider rumour spreads the more it becomes magnified is well exemplified, for at Maun everyone, European and Native alike, was fully convinced that the population on Chief's Island had been decimated of recent years by Sleeping Sickness; at Nokaneng Messrs. Wright and Pretorius and certain Natives, though a little doubtful whether any major epidemics had occurred, were convinced that isolated cases of Sleeping Sickness were scattered far and wide, and believed also that the tsetses on the island were larger and blacker than on the mainland (a myth), while Natives on the spot, attributing to the bites of the fly some isolated cases of sickness, in which recovery took place, were unanimous in refuting the reports of sickness at any time on a large scale.

We reached Kachikau on the return journey on the 9th July, and proceeded into the northern fly area at Seqi. I examined all the Natives in this village, none of whom were sick, taking 73 blood films, and we then set out for the villages in the Makwegana region in which it is thought that the two Native constables must have become infected with Sleeping Sickness.

Travel by lorry was difficult, the intervening region being trackless and uninhabited and the bush so dense in some places, the sand so deep in others, it took six days for the lorry, which once subsided into a disused game pit, to cover the distance, 111 miles. However on the 16th, we reached our destination where we made full enquiry of village headmen. It proved difficult, their intelligence not being of a high order, their statements being conflicting.

Maparanyane stated, however, that no one except a very old man named Marotse had died in his village for a very long time, but he remembered that a few months ago two deaths took place at Sashanga (a deserted village about six miles distant) formerly occupied by Masarwa (Bushmen) who came last year from the region of N'Dombo in the southern fly area (where there was the rumour that people had died out) and settled down temporarily to look for fruits and honey. The names of those who died, both young men, were (a) Lekoho and (b) Daa. When asked as to the whereabouts of the rest he replied that there had been one family only, and that on the death of the two men the survivors, Tsididi, his wife The and two children had returned whence they came, to the N'Dombo region. When asked why there were empty huts in his village he replied that the people from eight had gone to Kabamokuni, from which they had originally come, to buy seed grain and to visit and that he expected them back at the ploughing season, for they had been ordered to return by the Native constable from Mohembo. He stated further that two men had left for the Caprivi Strip.

Kasambara, the only occupant of his village consisting of four huts, stated that a number of deaths took place at Shashango at ploughing time (August - September) last year the names of twelve deceased being, according to him (a) Daa, a man (b) Sebage and his wife, (c) Moyo, a man, (d) Ngeu, a man (e) Chokwaba, a man (f) Dogay, his wife and three children, (g) Nomi a woman. Out of the whole community two female children only survived, according to him, and they were removed by other Bushmen and he does not know their present

whereabouts. When asked where the rest of his community was he replied that there were only four men, Mapalayne, Diwei, Serefi and Sitobe, who had gone with their wives and families and children to Kabamukuni to visit and to buy seed grain.

Machane (Samakane) who has lived many years at Makwegana stated that he had heard that people died last year at Shashango at ploughing time, but did not know how many. No people have died in his village now for some years and the information (supplied in April by Native constable Mpontshan to Sergeant Fox) that one had recently died in it, another being sick must relate to another place, Mbambo's possibly where a man named Mayo died some months ago, that village being now deserted, for all the people have gone to the other side of Siambisso.

The three headmen all considered that the deaths were at Shashango due to the bites of tsetses but did not refer to the illness as Kgotsella. They stated that the two constables would necessarily have passed through Shashango on their way to the Makwegana villages beyond.

I examined all the people resident in this part, including those of Maratoze and Machane whose villages lie out on the plain beyond the fly infested country, but without result, and made hut to hut searches lest there might be sick persons hidden away, but to no purpose. The blood examinations were also negative as to the presence of trypanosomes.

We then returned to Kasane, reaching it on 22nd July.

CONCLUSIONS IN REGARD TO NORTHERN FLY AREA:

There can be little doubt, I think, that the deaths that took place at Shashango were due to Sleeping Sickness, and that it was at this village the two unfortunate constables became infected.

The fact that, so far as the evidence goes, the epidemic appears to have been restricted to it is, as it seems to me, readily explicable. The Bushmen, unlike the permanent inhabitants whose villages are built in open country well out on the plain, had here selected as their temporary habitat a hillock, about two acres in extent, rising in grassland at no great distance from the tsetse-infested bush, this elevated land being almost unique in the district in that it is crowned with "Matsaodi" trees. These, being evergreen, afford at all season that shade which is as necessary for the tsetse as for man and beast. To this island site must the Bushmen have returned day by day from their expeditions into the fly area in search of food, tsetses following on and becoming temporarily domiciled in a habitat as suitable for them as for their hosts, the result being that when infection did break out in one person its transmission to the rest and their decimation rapidly followed.

It would now be difficult to hazard any opinion as to the source from which the flies derived in the first place the strain of trypanosome lethal to man, but the statement that this party of Bushmen had come from N'Dombo where it was rumoured that there had been deaths from Sleeping Sickness is at least suggestive. But the entire story will not probably now be pieced together unless the survivors Tsididi and his wife can be run to earth, and after this lapse of time it would be almost impossible

to discover their whereabouts in the vast expanse of almost unexplored country open to them. My own conviction is that the epidemic is at an end and that there is now little immediate chance of there being more than one or two sporadic cases possibly, for contact between man and the fly is not close, and the population is small, scattered and living for the most part in open country. There has been, moreover, a marked diminution of it as the result of the exodus into fly-free regions.

RECOMMENDATIONS:

The legends of the existence of Sleeping Sickness prior to 1934 probably have some foundation in fact in this area if not in the southern one. There are evidences of the existence along the Chobe of village sites in fly-infested country now uninhabited, for example at Semati, Lefatshe, Kaeundo, Matau and Kabambambi, and I endeavoured to ascertain why and when these were abandoned, and what became of the people, but without much success. It was stated by Dimbo at Makwegana that, many people having died a long time ago in these villages the survivors became frightened and had left the district. If this was the case it is paralleled in the present instance, for, as reported on the 22nd November last by trooper Ndaba "there are no people left here (Siambiso) only the old people are left, the young people have gone into the Caprivi Strip", and, as I myself elicited, the people bolted in every direction from the region soon after the deaths occurred, the Bushmen to the south, the rest into the Caprivi Strip, and towards Kabamukoni in particular (for it is difficult to accept the common story that whole families have gone merely for seed grain and to visit). It is therefore obvious that, quite apart from the

possibility of the recrudescence of the disease from time to time if the people remain where they are measures should be put into effect to prevent any repetition of occurrences whereby infection could be spread not only to the southern fly area where the population is greater - but to adjacent territory. In this connection it was stated at Makwegana most definitely by various Natives of standing - Machane, Kasambara, Marotse - that fly exists and at no great distance from the river across in the Strip, though I could get no information bearing on the possibility that Sleeping Sickness is endemic there also.

The problem of control could, as it seems to me, be readily solved if the whole population in Makwegana area, of which I took a census, were removed to a fly-free region, and if the whole fly area from Seqi on the east to Makwegana on the west were declared a prohibited area for Natives. This would, moreover, obviate the ever-present risk of the spread of Sleeping Sickness to the southern area.

As Sergeant Davis has remarked in his report dated 9th August, 1934 the Natives at Diyeyi (Makwegana) appear to be very indolent, following no pursuits at all and do nothing between sowing and reaping time. Their grain crop is certainly insufficient or must have failed to a great extent last year, for even now, not long after the rains, they are subsisting very largely on the roots of papyrus; they cannot keep cattle, or even sheep and goats by reason of the proximity of the fly. For several reasons, therefore it would be an advantage if they were moved. If it is decided that this is to be done it would hardly seem necessary on medical grounds alone in view of

my negative findings to bring them to Kavimba, in the proximity of Kachikau, as has been suggested, especially as this would necessarily involve their travel through miles of fly-infested country. It is, on the other hand, certain that in the neighbourhood of Kabamukoni from which the majority came, a journey of three to five days to the South West according to the report by Sergeant Davis, they would be more content than elsewhere, and here moreover their presence would contribute in some small degree towards the fruition of Dr. Carpenter's scheme for combating the advance of tsetse in this direction, for he observed in his report dated 25th February 1931 that "another area where concentration (of population) is recommended in the north is Kabamukoni..... Intensive settlement and energetic clearing for cultivation by the Mambukushu if supervised and directed on a plan will greatly hinder the possible advance of Tsetse".

If the people are settled here it will be desirable that a census and re-census should be taken from time to time, and that the abandoned settlements should be inspected occasionally to ascertain if any have made their way back. This could readily be done, I believe by patrol from Dichoro Police Camp.

They should be moved as soon as possible, and certainly in time for ploughing season. It would be desirable also that the people at Seqi at the eastern end of the fly area should be removed a few miles nearer towards Kachikau since their present proximity to the fly prevents them from keeping cattle with safety near the village, and where cattle can become infected there is always the possibility of human infection taking place also.

It is highly desirable that the Administration of South West Africa should be notified as to the occurrence

of Sleeping Sickness on this side of the Chobe, and urged to take steps to ascertain (if this has not been done already) whether tsetse fly does really exist in the Strip, and if so, the extent of the country infested.

The passage of Natives across the Chobe to this territory should also be prevented as far as possible except at certain definite crossings, at Seqi in the east and at Newone, or Siambisso's in the west perhaps, which are all outside the fly area, for it would seem from information obtained both at Seqi and Makwegana they are in the habit of passing freely to and fro across the river almost anywhere. Thus Dimbo at Makwegana stated that, when the water is low, people who have inter-married with others on the far side cross on the floating sudd (koma) to see their relations, and, when times were better, used to go as far south as Tsao which is close to the southern fly area. Machane, again, stated, as did Marotse, that people in the Strip frequently come over and return in canoes, and Sergeant Davis observes in his report of 9th August, that at Kasa "it is obvious that Natives cross the river and hunt on Crown lands, as two game pits were found and also the bones of a hippopotamus which had been killed about a month previously." I myself also noted several landing places for canoes at several parts along the river bank.

SUMMARY:

Every Native living in the villages situated in the southern fly area, and those bordering it, a total of 258 were medically examined. There was an entire absence of the signs and symptoms of Sleeping Sickness and all the blood films proved negative.

It is doubtful whether Sleeping Sickness has ever occurred in this area. Four cases considered by the Natives to be Kgotsella" were certainly not Sleeping Sickness.

All Natives living in the northern fly area or near it, a total of 186 were medically examined; again without result and all the blood films were negative.

Evidence showing that a minor epidemic in which thirteen Bushmen recently lost their lives, almost certainly from Sleeping Sickness, was obtained, and it must have been in their village that the two Police constables became infected.

Though the epidemic is at an end it is recommended that the population in this northern area should be removed and settled in a fly free neighbourhood from which many originally came, steps being taken to guard against their return.

The wanderings of Bushmen through both fly areas should be terminated.

The Administration of South West Africa should be invited not only to take steps to ascertain the position as regards tsetse and Sleeping Sickness in the Caprivi Strip; but should be asked to co-operate with a view to preventing Natives in it coming into the fly areas of this country.

Control of the movements of the Bushmen is also called for, since, owing to their predilection for the fly areas as hunting grounds, they are more likely than Natives of other Tribes to become infected and by their nomadic habits to spread infection far and wide, as might well have been the case in the present instance. Headmen might well be instructed to report the presence of

bands of them, which should be relegated to the region south of the Kasane-Maun-Tsao-Nokaneng road, pressure being brought to bear on them if they returned.

The tendency of Natives to proceed into fly areas in search of foodstuffs such as the pith of the wild date palms, the corns of papyrus and various roots might well be checked if they could be induced to cultivate some alternatives to the millet or maize, which in the areas I visited seem to be their sole crops, and which are said often to fail from failure of the rainfall or from locusts, as seems to have been the case in the present year. Rice, for instance could be grown, I feel sure, in almost unlimited quantities in the swamp areas: yet seems to be quite unknown. The foundations for a flourishing export trade to the Union when internal communications are improved might well be laid if Natives could be induced to cultivate this cereal.

Varieties of the sweet potato, too, could certainly be grown in moist land at the edge of the swamp, as it is grown round Lake Nyasa, at a season when the season for cereals is over; and the cultivation of cassava in the sandy soil must offer possibilities.

ACKNOWLEDGMENTS: Every facility was afforded me by the Protectorate Government, which I greatly appreciated. To the Principal Medical Officer, Dr. J. W. Stirling my grateful thanks are due, not only for making an opportunity for discussing the problem with me but for his practical assistance in personally seeing that I was provided with all the kit and scientific equipment needed.

From Captain Potts and Mr. Sullivan, the Resident Magistrates at Maun and Kasane respectively I received help in every way possible. I feel also that I should

express my appreciation of the way Mr. H. Norwebb carried out his duties as guide and interpreter. His fluency in the Sechuana language, his unique knowledge even of the more remote parts of Ngamiland and personal acquaintance-ship with many of the leading Natives proved invaluable.

W. A. LAMBORN.

29th July, 1935.

A P P E N D I X "C"

OUTPATIENTS FOR THE YEAR, 1935.

Diseases by Systems or Groups.	Principal Diseases	Nos.
1. EPIDEMIC, ENDEMIC AND INFECTIOUS DISEASES. <u>11,541 CASES.</u>	2. Tick-bite Fever	38
	5. Malaria -	
	(a) Tertian	821
	(c) Aestivo-autumnal	4
	(d) Cachexia	10
	7. Measles	183
	9. Whooping Cough	264
	10. Diphtheria	1
	11. Influenza	1,752
	13. Mumps	4
	16. Dysentery -	
	(a) Amoebic	71
	(b) Bacillary	50
	(c) Undefined or due to other causes	136
	17. Plague -	
	(a) Bubonic	2
	20. Leprosy	12
	21. Erysipelas	2
	22. Acute Poliomyelitis	1
	25. Other Epidemic Diseases -	
	(a) Rubeola (German Measles)	4
	(b) Varicella (Chicken-pox)	24
	(g) Yaws	64
	27. Anthrax	6
	31. Tuberculosis, Pulmonary and Laryngeal	245
	32. Tuberculosis of the Meninges or Central Nervous System	1
	33. Tuberculosis of the Intestines or Peritoneum	1
	34. Tuberculosis of the Vertebral Column	18
	35. Tuberculosis of Bones and Joints	47
	36. Tuberculosis of other organs -	
	(b) Bones	4
	(c) Lymphatic System	59
	37. Tuberculosis disseminated	
	(a) Acute	1
	38. Syphilis -	
	(a) Primary	29
	(b) Secondary	3,342
	(c) Tertiary	2,924
	(d) Hereditary	203
	(e) Period not indicated	319
	39. Soft Chancre	7
	40. A. Gonorrhoea and its complications.	831
	B. Gonorrhoeal Ophthalmia	41
	C. Gonorrhoeal Arthritis	20
2. GENERAL DISEASES NOT MENTIONED ABOVE. <u>1,266 CASES.</u>	43. Cancer or other malignant Tumours of the Buccal Cavity.	1
	Carried forward	11,542
	53.	

Diseases by Systems or Groups.	Principal Diseases	Nos.
	Brought forward	11,542
2. GENERAL DISEASES NOT MENTIONED ABOVE (Contd). 1,266 CASES.	44. Cancer or other malignant Tumours of the Stomach or Liver. 2 46. Cancer or other malignant Tumours of the Female Genital Organs 2 47. Cancer or other malignant Tumours of the Breast 1 48. Cancer or other malignant Tumours of the Skin 3 49. Cancer or other malignant Tumours of the Organs not specified 3 50. Tumours non-Malignant 154 51. Acute Rheumatism 336 52. Chronic Rheumatism 403 53. Scurvy (including Barlow's Disease) 248 54. Pellagra 2 55. Beri-Beri 4 56. Rickets 3 57. Diabetes (not including Insipidus) 2 58. Anaemia - (a) Pernicious 8 (b) Other Anaemias and Chlorosis 63 60. Diseases of the Thyroid Gland (a) Exophthalmic Goitre 6 65. Leukaemia - (a) Hodgkin's Disease 1 66. Alcoholism 5 67. Chronic poisoning by mineral substances (lead, mercury, etc) 5 69. Other General Diseases - Purpura Haemorrhagica 14	
3. AFFECTIONS OF THE NERVOUS SYSTEM AND ORGANS OF THE SENSES. 2,055 CASES.	70. Encephalitis (not including Encephalitis Lethargica) 2 71. Meningitis (not including Tuberculous Meningitis or Cerebro-Spinal Meningitis) 3 72. Locomotor Ataxia 3 73. Other affections of the Spinal Cord 2 74. Apoplexy - (a) Haemorrhage 4 (c) Thrombosis 2 75. Paralysis - (a) Hemiplegia 1 (b) Other Paralyses 22 76. General Paralysis of the Insane 8 77. Other forms of Mental Alienation 16 78. Epilepsy 10 80. Infantile Convulsions 1 81. Chorea 1 82. A. Hysteria 6 B. Neuritis 208 C. Neurasthenia 81 84. Other affections of the Nervous Systems, such as Paralysis Agitans 59	
	Carried forward	13,236
	54.	

Diseases by Systems or Groups.	Principal Diseases.	Nos.
	Brought forward	13,236
3. AFFECTIONS OF THE NERVOUS SYSTEM AND ORGANS OF THE SENSES (Contd). 2,055 CASES.	85. Affections of the Organs of Vision - (a) Diseases of the Eye (b) Conjunctivitis (c) Trachoma (d) Tumours of the Eye (e) Other affections of the Eye	202 773 29 3 237
	86. Affections of the Ear or Mastoid Sinus	382
4. AFFECTIONS OF THE CIRCULATORY SYSTEM. 425 CASES.	87. Pericarditis 88. Acute Endocarditis or Myocarditis 89. Angina Pectoris 90. Other Diseases of the Heart (a) Valvular - Mitral Aortic (b) Myocarditis	1 30 10 7 40 90 35
	91. Diseases of the Arteries - (a) Aneurism (b) Arterio-Sclerosis	1 17
	92. Embolism or Thrombosis (non cerebral)	1
	93. Diseases of the Veins - (a) Haemorrhoids (b) Varicose Veins	70 15
	94. Diseases of the Lymphatic System - Lymphangitis Lymphadenitis, Bubo (non-specific)	28 32
	95. Haemorrhage of undetermined cause	39
	96. Other affections of the Circulatory System	9
5. AFFECTIONS OF THE RESPIRATORY SYSTEM 2,639 CASES	97. Diseases of the Nasal Passages - Adenoids Polypus Rhinitis Coryza	54 5 18 317
	98. Affections of the Larynx - Laryngitis	97
	99. Bronchitis - (a) Acute (b) Chronic	1,007 306
	100. Broncho-Pneumonia	132
	101. Pneumonia - (a) Lobar (b) Unclassified	60 4
	102. Pleurisy, Empyema	99
	103. Congestion of the Lungs	1
	105. Asthma	39
	106. Pulmonary Emphysema	4
	107. Other affections of the Lungs - Pulmonary Spirochaetosis Bronchial catarrh	2 494
6. DISEASES OF THE DIGESTIVE SYSTEM. 5,150 CASES	108. A. Diseases of Teeth or Gums - Caries, Phorrhoea, etc.	994
	Carried forward	18,920
	55.	

Diseases by Systems or Groups.	Principal Diseases	Nos.
	Brought forward	18,920
6. DISEASES OF THE DIGESTIVE SYSTEM. (Contd). 5,150 CASES.	108. B. Other affections of the Mouth - Stomatitis	80
	Glossitis, etc.	26
	109. Affections of the Pharynx or Tonsils - Tonsillitis	352
	Pharyngitis	74
	110. Affections of the OEsophagus	1
	111. A. Ulcer of the Stomach	6
	B. Ulcer of the Duodenum	4
	112. Other affections of the Stomach- Gastritis	48
	Dyspepsia, etc.	430
	113. Diarrhoea and Enteritis - Under two years	451
	114. Diarrhoea and Enteritis - Two years and over	360
	Colitis	18
	Ulceration	1
	115. Ankylostomiasis	10
	116. Diseases due to Intestinal Parasites	
	(a) Cestoda (Taenia)	43
	(b) Trematoda (Flukes)	3
	(c) Nematoda (other than Ankylostoma)	31
	Ascaris	1
	Dracunculus	7
	Strongylus	12
	Oxyuris	4
	(f) Unclassified	32
	117. Appendicitis	21
	118. Hernia	
	119. A. Affections of the Anus, Fistula, etc.	5
	B. Other affections of the Intestines - Enteroptosis	6
	Constipation	2,069
	122. Cirrhosis of the Liver - (a) Alcoholic	14
	(b) Other forms	1
	123. Biliary Calculus	4
	124. Other affections of the Liver - Abscess	3
	Hepatitis	1
	Cholecystitis	13
	Jaundice	4
	126. Peritonitis (of unknown cause)	3
	127. Other affections of the Digestive System	18
7. DISEASES OF THE GENITO-URINARY SYSTEM (non-Venereal) 1,494 CASES	128. Acute Nephritis	31
	129. Chronic	28
	130. B. Schistosomiasis	62
	131. Other affections of the Kidneys- Pyelitis, etc.	39
	133. Diseases of the Bladder - Cystitis	113
	Carried forward	23,349

Diseases by Systems or Groups.	Principal Diseases	Nos.
	Brought forward	23,349
7. DISEASES OF THE GENITO - URINARY SYSTEM (non Venereal) (Contd). <u>1,494 CASES.</u>	134. Diseases of the Urethra - (a) Stricture (b) Other 135. Diseases of the Prostate Hypertrophy Prostatitis 136. Diseases (non-Venereal) of the Genital Organs of Man - Epididymitis Orchitis Hydrocele Ulcer of Penis 137. Cysts or other non-malignant Tumours of the Ovaries 138. Salpingitis - Abscess of the Pelvis 139. Uterine Tumours (non- malignant) 140. Uterine Haemorrhage (non- puerperal) 141. A. Metritis B. Other affections of the Female Genital Organs Displacement of Uterus Amenorrhoea Dysmenorrhoea Leucorrhoea 142. Diseases of the Breast (non- puerperal) Mastitis Abscess of Breast	10 15 11 1 8 5 12 12 71 111 47 76 28 23 117 130 370 162 4 8
8. PUERPERAL STATE <u>183 CASES</u>	143. A. Normal Labour B. Accidents of Pregnancy (a) Abortion (b) Ectopic Gestation (c) Other accidents of Pregnancy 144. Puerperal Haemorrhage 145. Other accidents of Parturition 146. Puerperal Septicaemia 148. Puerperal Eclampsia 149. Sequelae of Labour 150. Puerperal affections of the Breast Puerperal Insanity	68 19 37 3 5 4 2 22 22 1
9. AFFECTIONS OF THE SKIN AND CELLULAR TISSUES <u>875 CASES</u>	151. Gangrene 152. Boil - Carbuncle 153. Abscess Whitlow Cellulitis 154. A. Tinea B. Scabies 155. Other diseases of the skin Erythema Urticaria Eczema	1 8 64 67 105 48 18 121 143 27 94 112
	Carried forward	25,561
	57.	

Diseases by Systems or Groups.	Principal Diseases	Nos.
	Brought forward	25,561
9. AFFECTIONS OF THE SKIN AND CELLULAR TISSUES (Contd) 875 CASES.	155. Other diseases of the Skin Herpes Psoriasis Elephantiasis Myiasis Acne Impetigo	23 9 1 2 29 3
10. DISEASES OF BONES AND ORGANS OF LOCOMOTION (Other than Tuberculous) 264 CASES	156. Diseases of Bones - Osteitis 157. Diseases of Joints Arthritis Synovitis 158. Other Diseases of Bones or Organs of Locomotion	23 152 50 39
11. MALFORMATIONS 8 CASES	159. Malformations Hydrocephalus Spina Bifida, etc.	2 6
12. DISEASES OF INFANCY 81 CASES	160. Congenital Debility 161. Premature Birth 162. Other affections of Infancy 163. Infant neglect (infants of three months or over)	1 3 62 15
13. AFFECTIONS OF OLD AGE 8 CASES	164. Senility Senile Dementia	8
14. AFFECTIONS PRODUCED BY EXTERNAL CAUSES. 1,330 CASES	170. Suicide by Firearms 175. Food Poisoning Botulism 176. Attacks of poisonous animals Snake bite Insect bite 177. Other accidental poisonings 178. Burns (by Fire) 179. Burns (other than by Fire) 181. Poisoning by Gas (accidental) 183. Wounds (by Firearms, war excepted) 184. Wounds (by cutting or stabb- ing Instruments) 185. Wounds (by Fall) 186. Wounds (in Mines or Quarries) 187. Wounds (by Machinery) 188. Wounds (crushing, e.g. Railway accidents, etc.) 189. Injuries inflicted by Animals, Bites, Kicks, etc. 193. Exposure to Cold, Frost Bite, etc. 194. Exposure to Heat - Sunstroke - 195. Lightning Stroke 201. A. Dislocation B. Sprain	2 3 1 4 45 2 194 56 14 6 417 121 68 17 67 78 11 2 3 21 78
	Carried forward	27,199
	53.	

Diseases by Systems or Groups.	Principal Diseases	Nos.
	Brought forward	27,199
14. AFFECTIONS PRODUCED BY EXTERNAL CAUSES (Contd). 1,330 CASES.	201. C. Fracture	36
	202. Other external Injuries	84
15. ILL-DEFINED DISEASES 296 CASES.	204. Sudden Death (cause unknown)	3
	205. A. Diseases not already specified or ill-defined	
	Ascites	6
	OEdema	1
	Asthenia	278
	Shock	1
	B. Malingering	7
16. DISEASES, THE TOTAL OF WHICH HAVE NOT CAUSED 10 DEATHS 46 CASES	Diseases, the total of which have not caused 10 deaths	46
	TOTAL	27,661

A P P E N D I X "D"

RETURN OF DISEASES AND DEATHS - INPATIENTS - FOR THE YEAR 1935.

D I S E A S E S.	Remaining in Hospital 1935.	Yearly	Total	Total Cases Treated.	Remaining in Hospital 1936.
		Admis- sions.	Deaths.		
<u>I. EPIDEMIC, ENDEMIC AND INFECTIOUS DISEASES.</u>					
1. Enteric Group -					
(a) Typhoid Fever	-	9	-	9	-
3. Relapsing Fever	-	1	-	1	-
5. Malaria					
(a) Tertian	-	28	-	28	-
(c) Aestive-autumnal	-	2	-	2	-
7. Measles	-	3	-	3	-
9. Whooping Cough	-	4	-	4	-
10. Diphtheria	-	10	-	10	-
11. Influenza	-	68	-	68	-
16. Dysentery					
(a) Amoebic	-	28	-	28	2
(b) Vacillary	-	5	-	5	2
(c) Undefined or due to other causes	-	9	-	9	-
21. Erysipelas	-	2	-	2	1
24. Epidemic Cerebro-Spinal Fever	-	2	2	2	-
25. Other Epidemic Diseases:					
(g) Yaws	-	2	-	2	-
29. Tetanus	-	2	1	2	-
31. Tuberculosis, Pulmonary and Laryngeal	1	45	4	46	1
32. Tuberculosis of the Menings or C.N.S.	-	1	-	1	-
33. Tuberculosis of the Intestines or Peritoneum	-	4	2	4	-
34. Tuberculosis of the Vertebral Column	3	10	1	12	2
35. Tuberculosis of Bones and Joints	1	14	-	15	5
36. Tuberculosis of other organs:					
(c) Lymphatic System	4	16	-	20	1
(d) Genito-urinary	-	2	2	2	-
37. Tuberculosis disseminated:					
(b) Chronic	3	-	-	3	-
38. Syphilis:					
(a) Primary	-	3	-	3	-
(b) Secondary	2	15	-	17	-
(c) Tertiary	7	34	3	41	1
(d) Hereditary	-	6	1	6	1
(e) Period not indicated	-	2	-	2	-
40. Gonorrhoea and its complica- tions:	2	9	-	11	-
(b) Gonorrhoeal Ophthalmia	-	1	-	1	-
(c) Gonorrhoeal Arthritis	-	5	-	5	-
<u>II. GENERAL DISEASES NOT MENTIONED ABOVE.</u>					
44. Cancer or other malignant Tumours of the Stomach or Liver.	-	2	-	2	1
Carried forward :	23	344	16	366	17
	60.				

D I S E A S E S	Remaining in Hospital 1935.	Yearly	Total	Total Cases Treated.	Remaining in Hospital 1936.
		Admis- sions.	Deaths.		
Brought forward :	23	344	16	366	17
<u>GENERAL DISEASES NOT MENTIONED ABOVE (Contd).</u>					
46. Cancer or other malignant Tumours of the Female Genital Organs	-	2	-	2	-
48. Cancer or other malignant Tumours of the Skin	-	2	-	2	-
49. Cancer or other malignant Tumours of the Organs not specified	-	4	2	4	-
50. Tumours non-Malignant	3	48	-	51	-
51. Acute Rheumatism	-	16	1	16	3
52. Chronic Rheumatism	-	9	-	9	-
53. Scurvy (including Barlow's Disease)	1	62	2	63	15
55. Beri-Beri	-	3	1	3	-
57. Diabetes (not including Insipidus)	-	4	1	4	-
58. Anaemia: (b) Other Anaemias and Chlorosis	-	6	1	6	-
65. Leukaemia	-	1	1	1	-
66. Alcoholism	-	1	-	1	-
67. Chronic poisoning by mineral substances (lead, mercury, etc.)	-	1	-	1	-
68. Chronic poisoning by organic substances (Morphia, Cocaine, etc.)	-	5	2	5	-
III. <u>AFFECTIONS OF THE NERVOUS SYSTEM AND ORGANS OF THE SENSES.</u>					
70. Encephalitis (not including Emcephalitis Lethargica)	-	3	-	3	-
71. Meningitis (not including Tuberculous Meningitis or Cerebro-spinal Meningitis)	-	2	1	2	1
72. Locomotor Ataxia	-	1	-	1	-
74. Apoplexy: (a) Haemorrhage	-	2	-	2	-
75. Paralysis: (a) Hemiplegia	-	1	-	1	-
(b) Other Paralysees	-	2	-	2	-
77. Other forms of Mental Alienation	-	2	-	2	-
78. Epilepsy	-	5	1	5	-
79. Eclampsia, Convulsions (non-puerperal) 5 years or over	-	1	-	1	-
80. Infantile Convulsions	-	1	-	1	-
81. Chorea	-	1	-	1	-
82. A. Hysteria	-	4	-	4	-
B. Neuritis	-	2	-	2	-
Carried forward :	27	535	29	561	36
	61.				

D I S E A S E S	Remaining in Hospital 1935.	Yearly	Total	Total Cases Treated.	Remaining in Hospital 1936.
		Admis- sions.	Deaths.		
Brought forward	27	535	29	561	36
III. <u>AFFECTIONS OF THE NERVOUS SYSTEM AND ORGANS OF THE SENSES (Contd).</u>					
82. C. Neurasthenia	-	6	-	6	-
84. Other affections of the Nervous System, such as Paralysis Agitans	-	1	-	1	-
85. Affections of the Organs of Vision					
(a) Diseases of the Eye	2	25	-	27	2
(b) Conjunctivitis	-	9	-	9	-
(c) Trachoma	-	1	-	1	-
(d) Tumours of the Eye	-	4	-	4	-
(e) Other affections of the Eye	1	22	-	23	2
86. Affections of the Ear or Mastoid Sinus	1	5	-	6	1
IV. <u>AFFECTIONS OF THE CIRCULATORY SYSTEM.</u>					
87. Pericarditis	1	2	-	3	-
88. Acute Endocarditis or Myocarditis	-	8	5	8	-
89. Angina Pectoris	1	-	-	1	-
90. Other Diseases of the Heart:					
(a) Mitral	1	6	1	7	-
Aortic	1	-	-	1	-
Tricuspid	-	1	-	1	-
(b) Myocarditis	1	2	-	3	1
91. Diseases of the Arteries					
(a) Aneurism	-	2	1	2	-
(b) Arterio-Sclerosis	-	1	-	1	-
93. Diseases of the Veins					
Haemorrhoids	-	5	-	5	-
Varicose Veins	-	4	-	4	-
94. Diseases of the Lymphatic System					
Lymphangitis	-	2	-	2	-
Lymphadenitis, (Bubo) (non-specific)	-	1	-	1	-
95. Haemorrhage of Undeter- mined cause	-	8	1	8	-
96. Other affections of the Circulatory System	-	3	-	3	-
V. <u>AFFECTIONS OF THE RESPIRATORY SYSTEM.</u>					
97. Diseases of the Nasal Passages					
Adenoids	-	17	-	17	-
Rhinitis	-	2	-	2	-
98. Affections of the Larynx					
Laryngitis	-	6	-	6	-
99. Bronchitis					
(a) Acute	-	39	-	39	-
(b) Chronic	-	2	-	2	-
100. Broncho-Pneumonia	-	63	14	63	4
Carried forward :	36	782	51	817	46
		62.			

D I S E A S E S	Remaining in Hospital 1935.	Yearly	Total	Total Cases Treated.	Remaining in Hospital, 1936.
		Admis- sions.	Deaths.		
Brought forward :	36	782	51	817	46
V. <u>AFFECTIONS OF THE RESPIRATORY SYSTEM.</u>					
101. Pneumonia					
(a) Lobar	4	41	9	45	1
(b) Unclassified	-	21	2	21	-
102. Pleurisy, Empyema	3	18	1	21	-
103. Congestion of the Lungs	-	4	-	4	2
104. Gangrene of the Lungs	-	1	-	1	-
105. Asthma	1	8	1	9	-
106. Pulmonary Emphysema	-	1	-	1	1
107. Other affections of the Lungs					
Pulmonary Spirochaetosis	-	1	-	1	-
VI. <u>DISEASES OF THE DIGESTIVE SYSTEM</u>					
108. A. Diseases of Teeth or Gums - Caries, Pyorrhoea, etc.	-	12	-	12	-
B. Other affections of the Mouth					
Stomatitis	-	4	-	4	-
109. Affections of the Pharynx or Tonsils					
Tonsillitis	-	52	-	52	1
Pharyngitis	-	5	-	5	-
111. A. Ulcer of the Stomach	-	1	-	1	-
B. Ulcer of the Duodenum	-	1	-	1	-
112. Other affections of the Stomach					
Gastritis -	-	4	-	4	-
Dyspepsia, etc.	2	7	-	9	-
113. Diarrhoea and Enteritis Under two years	-	7	-	7	-
114. Diarrhoea and Enteritis Two years and over	3	11	-	14	-
Colitis	-	10	2	10	-
Ulceration	-	2	1	2	-
116. Diseases due to Intestinal Parasites					
(a) Cestoda (Taenia)	-	5	-	5	-
117. Appendicitis	1	32	-	33	2
118. Hernia	-	3	-	3	-
119. A. Affections of the Anus, Fistula, etc.	-	6	-	6	1
B. Other affections of the Intestines	-	3	2	3	-
Constipation	-	13	-	13	1
120. Acute Yellow Atrophy of the Liver	-	1	1	1	-
124. Other affections of the Liver					
Abscess	-	4	2	4	1
Hepatitis	-	2	-	2	-
Jaundice	-	1	-	1	-
126. Peritonitis (of unknown cause)	-	2	2	2	-
Carried forward :	50	1065	74	1114	56
	63.				

D I S E A S E S.	Remaining in Hospital 1935.	Yearly	Total	Total Cases Treated.	Remaining in Hospital 1936.
		Admis- sions.	Deaths.		
Brought forward :	50	1065	74	1114	56
VII. <u>DISEASES OF THE GENITO- URINARY SYSTEM (Non- Venereal).</u>					
128. Acute Nephritis	-	9	-	9	1
129. Chronic	1	2	1	3	-
130. B. Schistosomiasis	-	1	-	1	-
131. Other affections of the Kidneys, Pyelitis, etc.	1	8	-	9	-
132. Urinary Calculus	-	1	-	1	-
133. Diseases of the Bladder Cystitis	-	5	-	5	-
134. Diseases of the Urethra (a) Stricture	-	9	-	9	2
(b) Other	1	-	-	1	-
135. Diseases of the Prostate Hypertrophy	-	3	-	3	-
Prostatitis	1	2	-	3	-
136. Diseases (non Venereal) of the Genital Organs of Man:					
Orchitis	-	4	-	4	-
Hydrocele	1	8	-	9	-
Ulcer of Penis	-	1	-	1	-
137. Cysts or other non-malignant Tumours of the Ovaries	-	34	-	34	1
138. Salpingitis	-	12	-	12	2
Abscess of the Pelvis	-	34	1	34	-
139. Uterine Tumours (non- malignant)	-	23	-	23	-
141. A. Metritis	2	25	-	27	3
B. Other affections of the Female Genital Organs					
Displacement of Uterus	3	35	-	38	2
Amenorrhoea	-	10	-	10	-
Dysmenorrhoea	-	17	-	17	-
Leucorrhoea	-	5	-	5	1
142. Diseases of the Breast (non-puerperal)					
Mastitis	-	2	-	2	-
VIII. <u>PUERPERAL STATE</u>					
143. A. Normal Labour	-	24	-	24	1
B. Accidents of Pregnancy					
(a) Abortion	1	4	-	5	-
(c) Other accidents of Pregnancy	1	4	-	5	-
144. Puerperal Haemorrhage	-	1	-	1	-
145. Other accidents of Parturition	-	7	1	7	1
146. Puerperal Septicaemia	1	5	2	6	-
149. Sequelae of Labour	-	8	-	8	2
150. Puerperal affections of the Breast	-	4	-	4	-
IX. <u>AFFECTIONS OF THE SKIN AND CELLULAR TISSUES.</u>					
151. Gangrene	-	2	1	2	-
Carried forward	63	1374	80	1436	72
	64.				

D I S E A S E S	Remaining in Hospital 1935.	Yearly	Total	Total Cases Treated.	Remaining in Hospital 1936.
		Admis- sions.	Deaths.		
Brought forward :	63	1374	80	1436	72
IX. <u>AFFECTIONS OF THE SKIN AND CELLULAR TISSUES (Contd).</u>					
152. Boil - Carbuncle	-	2	-	2	-
153. Abscess					
Whitlow	-	12	-	12	-
Cellulitis	-	7	-	7	1
155. Other Diseases of the Skin					
Eczema	1	-	-	1	-
Psoriasis	-	2	-	2	-
X. <u>DISEASES OF BONES AND ORGANS OF LOCOMOTION (Other than Tuberculous)</u>	2	6	-	8	-
157. Diseases of Joints					
Arthritis	-	16	-	16	4
Synovitis	1	9	-	10	-
158. Other Diseases of Bones or Organs of Locomotion	-	2	-	2	1
XI. <u>MALFORMATIONS.</u>					
159. Malformations	-	2	-	2	2
XII. <u>DISEASES OF INFANCY</u>					
161. Premature Birth	-	1	1	1	-
162. Other affections of Infancy	-	1	1	1	-
XIII. <u>AFFECTIONS OF OLD AGE.</u>					
164. Senility					
Senile Dementia	-	4	1	4	-
XIV. <u>AFFECTIONS PRODUCED BY EXTERNAL CAUSES.</u>					
166. Corrosive Poisoning (Intentional)	-	1	-	1	-
171. Suicide by cutting or Stabbing Instruments	-	1	1	1	-
176. Attacks of poisonous animals					
Snake Bite	1	4	-	5	-
177. Other accidental Poisonings	-	1	-	1	-
178. Burns (by Fire)	1	26	1	27	1
180. Suffocation (accidental)	-	1	-	1	-
181. Poisoning by Gas (accidental)	-	1	-	1	-
183. Wounds (by Firearms, war excepted)	-	2	-	2	-
184. Wounds (by cutting or stabbing Instruments)	2	43	-	45	1
185. Wounds (by Fall)	1	14	-	15	-
186. Wounds (in Mines or Quarries)	1	6	-	7	-
187. Wounds (by Machinery -)	-	9	-	9	-
188. Wounds (crushing e.g. railway accidents, etc.)	3	21	1	24	1
189. Injuries inflicted by Animals, Bites, Kicks, etc.	1	19	1	20	-
200. Infanticide (Murder of an infant under one year)	-	1	1	1	-
201. A. Dislocation	-	8	-	8	-
Carried forward	77	1596	88	1672	83
	65.				

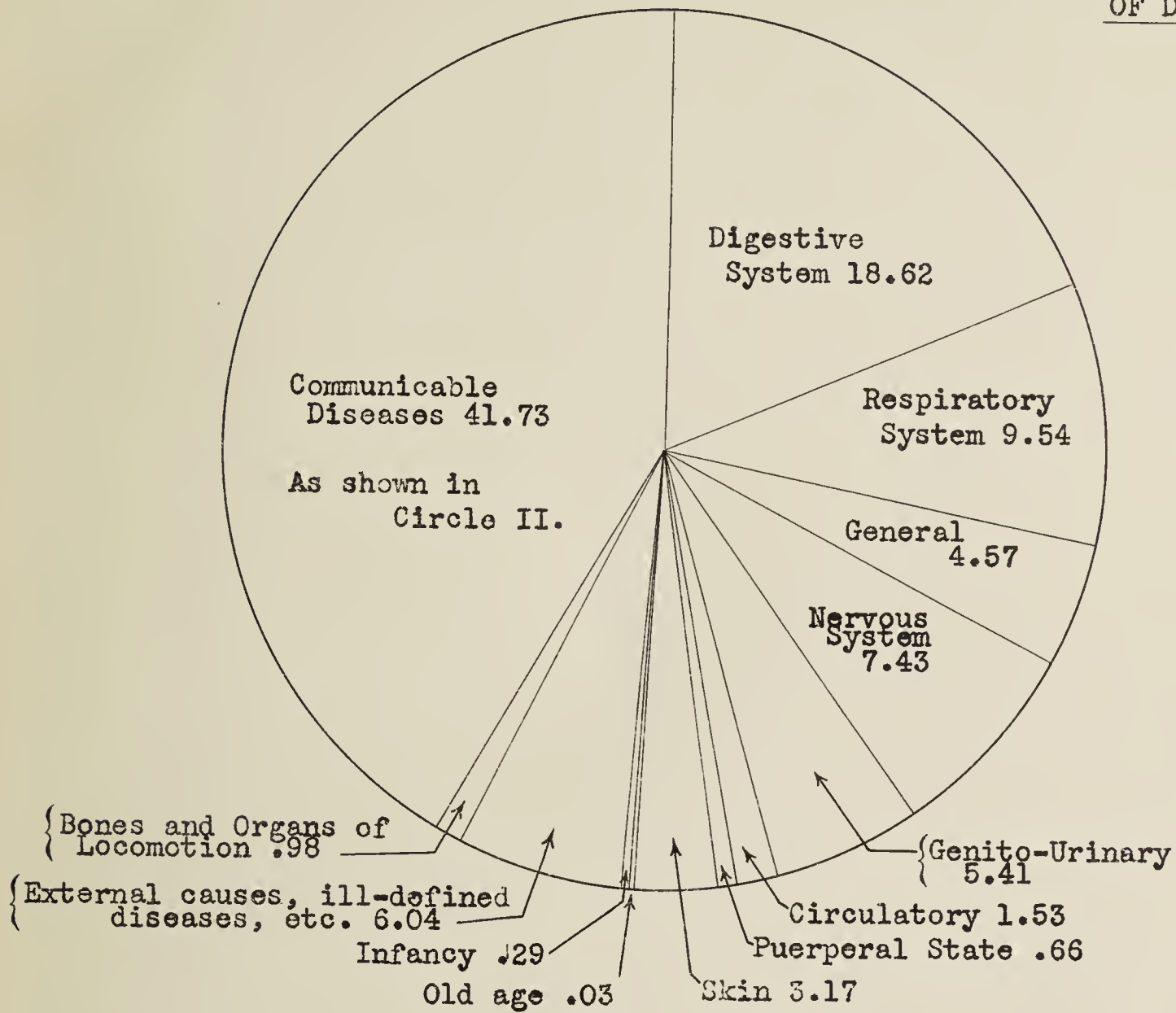
D I S E A S E S	Remaining in Hospital 1935	Yearly Admis- sions.	Total Deaths.	Total Cases Treated.	Remaining in Hospital 1936.
Brought forward	77	1596	88	1672	83
XIV. <u>AFFECTIONS PRODUCED BY EXTERNAL CAUSES (Contd)</u>					
201. B. Sprain	-	2		2	
C. Fracture	5	34	1	39	6
202. Other external Injuries	1	12	-	13	-
XV. <u>ILL-DEFINED DISEASES.</u>					
204. Sudden Death (Cause un- known)	-	1	1	1	-
205. A. Diseases not already specified or ill-defined					
Ascites	-	6		6	-
OEdema	-	2	-	2	-
Asthenia	-	4	1	4	1
Shock	-	6		6	-
Hyperpyrexia	-	1		1	1
B. Malingering	-	1	-	1	-
XVI. <u>DISEASES, THE TOTAL OF WHICH HAVE NOT CAUSED 10 DEATHS</u>	-	9	1	9	-
TOTAL	83	1674	92	1756	91

APPENDIX "E".

COMMUNICABLE AND GENERAL SYSTEMIC DISEASES.

I.

DIAGRAMS SHOWING INCIDENCE
OF DISEASE.



COMMUNICABLE DISEASES.

II.

